Technical Bulletin 11572

Changes to Local Digit Maps on SoundPoint® IP, SoundStation® IP, and Polycom® VVX® 1500 Phones

This technical bulletin provides detailed information on how to modify the configuration files to automate the setup phase of number-only calls.

> This information applies to SoundPoint IP and SoundStation IP phones running SIP application version UCS 3.3.3 or later. This information applies to the Polycom VVX 1500 phones running SIP application version 3.1.2RevB or later. This information applies to SoundPoint IP 321/331 phones running SIP 3.1.2RevC or later. This information applies to SoundPoint IP 335 phones running SIP application version 3.2.1RevB or later.
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> This technical bulletin is up-to-date for Polycom UC Software version 3.3.3.
>
> For UC Software 4.0.0 or later, see the latest *Polycom UC Software Administrators' Guide*.

Introduction

Enhancements have been made to this feature that can eliminate the need for using the **Send** soft key when making outgoing calls. New digit map replacement rules allow, for example, the removal of the 9 or 0 from a string of dialed digits or adding the area code before dialed digits when a switch to 10 digit phone numbers occurs.

As soon as a digit pattern matching the digit map is found, the call setup process will complete automatically. The configuration syntax is the same as that specified in 2.1.5 of RFC 3435, which is used as a guideline only. The phone's behavior when the user dials digits that do not match the digit map is configurable. It is also possible to strip a trailing '#' from the digits sent, prepend a '+' to digits, or to replace certain matched digits with the introduction of 'R' to the digit map.

Note   Digit maps do not apply to on-hook dialing. The parameter settings described in the next section, Configuration File Changes, are ignored during on-hook dialing.

Configuration File Changes

If a single dial plan is used for the entire company, the dial plan is best specified in the application configuration file (**sip.cfg**) or **site.cfg**. You can also create multiple dial plans and specify which phones are to use which in the phone-specific configuration file (**phone1.cfg**) or **site.cfg**.

> Polycom recommends that you create another configuration file with your organization's modifications. If you must change any Polycom templates, back them up first.
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> For SIP 3.2.x or earlier software releases, see the *Configuration File Management on SoundPoint IP Phones* white paper at http://www.polycom.com/common/documents/whitepapers/configuration_file_management_on_soundpoint_ip_phones.pdf.
>
> For UCS 3.3.x, see the *Polycom UC Software Provisioning Best Practices* white paper at http://www.polycom.com/global/forms/verify.html?retURL=http://www.polycom.com/global/documents/whitepapers/uc-software-provisioning-best-practices-whitepaper.pdf .

Configuration changes can performed centrally at the provisioning server or locally:

Central (provisioning server)	SIP 3.2.x Configuration file: **sip.cfg**	Specify impossible match behavior, trailing # behavior, digit map matching strings, and time out value. • For more information, see Dial Plan in Application Configuration File on page 3.
	SIP 3.2.x Configuration file: **phone1.cfg**	Specify per-registration impossible match behavior, trailing # behavior, digit map matching strings, and time out values that override those in **sip.cfg**. • For more information, see Dial Plan in Per-Phone Configuration File on page 6.
	UCS 3.3.x Configuration template: **site.cfg**	Specify impossible match behavior, trailing # behavior, digit map matching strings, and time out value. • For more information, see Dial Plan in Application Configuration File on page 3. Specify per-registration impossible match behavior, trailing # behavior, digit map matching strings, and time out values that override those site-specific parameters. • For more information, see Dial Plan in Per-Phone Configuration File on page 6.
Local	Web Server (if enabled)	Specify impossible match behavior, trailing # behavior, digit map matching strings, and time out value. Navigate to: http://<phoneIPAddress>/appConf.htm#ls Changes are saved to local flash and backed up to ***<Ethernet address>*-phone.cfg** on the boot server. Changes will permanently override global settings unless deleted through the Reset Local Config menu selection.

Dial Plan in Application Configuration File

The `<dialplan/>` attribute is described below and also includes:

- Digit Map `<digitmap/>` on page 4.

Note	The dial plan is not applied against placed call list, voicemail, last call return, and remote control dialed numbers.

This configuration attribute is defined as follows:

Attribute (bold = change causes restart/reboot)	Permitted Values	Default	Interpretation
dialplan.applyToCallListDial	0 or 1	0	This attribute covers dialing from Received Call List and Missed Call List including dialing from Edit or Info sub-menus. If set to 0, the digit map replacement operations are not applied against the dialed number. if set to 1, the digit map replacement operations are applied against the dialed number.
dialplan.applyToDirectoryDial	0 or 1	0	This attribute covers dialing from Directory as well as Speed Dial List. Value interpretation is the same as for `dialplan.applyToCallListDial`. ***Note:*** *An Auto Call Contact number is considered a dial from directory.*
dialplan.applyToUserDial	0 or 1	1	This attribute covers the case when the user presses the **Dial** soft key to send dialed number when in idle state display. Value interpretation is the same as for `dialplan.applyToCallListDial`.
dialplan.applyToUserSend	0 or 1	1	This attribute covers the case when the user presses the **Send** soft key to send the dialed number. Value interpretation is the same as for `dialplan.applyToCallListDial`.

Attribute (bold = change causes restart/reboot)	Permitted Values	Default	Interpretation
dialplan.filterNonDigitUriUsers	0 or 1	0	If set to 1, filter out + (this is the previous behavior.) If set to 0, filter the same as with 0, but allow + .
dialplan. impossibleMatchHandling	0, 1 or 2	0	Affects digits entered while in dial mode. For example, the digits are affected after a user has picked up the handset, headset, or pressed the dial key, and not when hot dialing, contact dialing, or call list dialing. If set to 0, the digits entered up to and including the point where an impossible match occurred are sent to the server immediately. If set to 1, give reorder tone. If set to 2, allow user to accumulate digits and dispatch call manually with the Send soft key.
dialplan.removeEndOfDial	0 or 1	1	If set to 1, strip trailing # digit from digits sent out.

Digit Map

A digit map is defined either by a "string" or by a list of strings. Each string in the list is an alternative numbering scheme, specified either as a set of digits or timers, or as an expression over which the gateway will attempt to find a shortest possible match.

Digit map extension letter "R" indicates that certain matched strings are replaced. The following examples shows the semantics of the syntax:

- R9RRxxxxxxx—remove 9 at the beginning of the dialed number

  — For example, if a customer dials 914539400, the first 9 is removed when the call is placed.

- RR604Rxxxxxxx—prepend 604 to all 7 digit numbers

  — For example, if a customer dials 4539400, 604 is added to the front of the number, so a call 6044539400 is placed.

- R9R604Rxxxxxxx—replaces 9 with 604

- R999R911R—convert 999 to 911

- xxR601R600Rxx—when applied on 1160122 gives 1160022

- xR60xR600Rxxxxxxx—any 60x will be replaced with 600 in the middle of the dialed number that matches

— For example, if a customer dials 16092345678, a call is placed to 16002345678.

The following guidelines should be noted:

- You must use only *, #, or 0-9 between second and third R

- If a digit map does not comply, it is not included in the digit plan as a valid one. That is, no matching is done against it.

- There is no limitation on the number of R triplet sets in a digit map. However, a digit map that contains less than full number of triplet sets (for example, a total of 2Rs or 5Rs) is considered an invalid digit map.

- Using T in the left part of RRR syntax is not recommended. For example, R0TR322R should be avoided.

This configuration attribute is defined as follows:

Attribute (bold = change causes restart/reboot)	Permitted Values	Default	Interpretation
dialplan.digitmap	string compatible with the digit map feature of MGCP described in 2.1.5 of RFC 3435. String is limited to 768 characters and 30 segments; a comma is also allowed; when reached in the digit map, a comma will turn dial tone back on;'+' is allowed as a valid digit; extension letter 'R' is used as defined above.	[2-9]11|0T| +011xxx.T| 0[2-9]xxxxxxxxx| +1[2-9]xxxxxxx| [2-9]xxxxxxxxx| [2-9]xxxT	When this attribute is present, number-only dialing during the setup phase of new calls will be compared against the patterns therein and if a match is found, the call will be initiated automatically eliminating the need to press Send. Attributes `dialplan.applyToCallListDial`, `dialplan.applyToDirectoryDial`, `dialplan.applyToUserDial`, and `dialplan.applyToUserSend` control the use of match and replace in the dialed number in the different scenarios.
dialplan.digitmap. timeOut	string of positive integers separated by '|'	3 | 3 | 3 | 3 | 3 | 3 | 3	The timeout in seconds for each segment of digit map. ***Note:*** *If there are more digit maps than timeout values, the default value of 3 will be used. If there are more timeout values than digit maps, the extra timeout values are ignored.*

Dial Plan in Per-Phone Configuration File

Per-registration dial plan configuration is supported.

The `<dialplan/>` attribute is described below and also includes:

- Digit Map `<digitmap/>` on page 4.

In the following tables, x is the registration number. IP 301, 320, 321, 330, 331, 335, 430: x=1-2; IP 450, 501: x=1-3; IP 550, 560: x=1-4; IP 601: x=1-12; IP 650, 670: x=1-34; IP 4000: x=1; IP 6000: x=1; IP 7000: x=1; VVX 1500: x=1-6.

Attribute (bold = change causes restart/reboot)	Permitted Values	Default	Interpretation
dialplan.x.applyToCallListDial	0 or 1	0	When present, and if `dialplan.x.digitmap` is not Null, this attribute overrides the global dial plan. For interpretation, see Dial Plan in Application Configuration File on page 3.
dialplan.x.applyToDirectoryDial	0 or 1	0	When present, and if `dialplan.x.digitmap` is not Null, this attribute overrides the global dial plan. For interpretation, see Dial Plan in Application Configuration File on page 3.
dialplan.x.applyToUserDial	0 or 1	1	When present, and if `dialplan.x.digitmap` is not Null, this attribute overrides the global dial plan. For interpretation, see Dial Plan in Application Configuration File on page 3.
dialplan.x.applyToUserSend	0 or 1	1	When present, and if `dialplan.x.digitmap` is not Null, this attribute overrides the global dial plan. For interpretation, see Dial Plan in Application Configuration File on page 3.

Attribute (bold = change causes restart/reboot)	Permitted Values	Default	Interpretation
dialplan.x. impossibleMatchHandling	0, 1 or 2	0	When present, and if dialplan.x.digitmap is not Null, this attribute overrides the global dial plan. For interpretation, see Dial Plan in Application Configuration File on page 3.
dialplan.x.removeEndOfDial	0 or 1	1	When present, and if dialplan.x.digitmap is not Null, this attribute overrides the global dial plan. For interpretation, see Dial Plan in Application Configuration File on page 3.

Digit Map

The digit map syntax is the same as for the application configuration file (see Digit Map on page 4).

This configuration attribute is defined as follows:

Attribute (bold = change causes restart/reboot)	Permitted Values	Default	Interpretation
dialplan.x.digitmap	A string compatible with the digit map feature of MGCP described in 2.1.5 of RFC 3435; string is limited to 768 characters and 30 segments; a comma is also allowed; when reached in the digit map, a comma will turn dial tone back on;'+' is allowed as a valid digit; extension letter 'R' is used as defined above.	Null	When present, this attribute overrides the global dial plan. For more information, see Digit Map <digitmap/> on page 4.

Attribute (bold = change causes restart/reboot)	Permitted Values	Default	Interpretation
dialplan.x.digitmap.timeOut	string of positive integers separated by '|'	Null	When present, and if `dialplan.x.digitmap` is not Null, this attribute overrides the global dial plan. For more information, see Digit Map <digitmap/> on page 4.

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